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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/680,896	10/08/2003	Toshihiko Ishigami	2562/71228/JPW/PJP/FHB	6288

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Cooper & Dunham LLP
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New York, NY 10036

EXAMINER

WALFORD, NATALIE K

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2879

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/680,896	Applicant(s) ISHIGAMI ET AL.	
	Examiner Natalie K. Walford	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-8 and 10-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-8 and 10-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The Amendment, filed on March 19, 2007, has been entered and acknowledged by the Examiner. Cancellation of claim 2 has been entered. Claims 1, 3-8, and 10-19 are pending in the instant application.

Claim Objections

Claims 14-18 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim 13. See MPEP § 608.01(n).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Otani (US 4,870,316).

Regarding claim 1, Otani discloses a metal vapor discharge lamp (item 200) comprising: a refractory and light-transmitting hermetic vessel (not labeled); a pair of electrode (items 2A and 2B) fixed to said hermetic vessel; a discharge medium (column 5, lines 25-29) sealed in the hermetic vessel, the discharge medium containing a halide, a rare gas and substantially disusing mercury (column 5, lines 25-29), the halide containing a halide of cesium (Cs) which radiates light of near-infrared wavelengths (750-1100 nm) (column 5, lines 25-29); and most of light

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irradiated from the metal vapor discharge lamp having near-infrared wavelengths (750 - 1100 nm) (column 4, lines 23-27).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otani (US 4,870,316) in view of Hiramoto et al. (US PUB 2001/0056294).

Regarding claim 3, Otani discloses the metal vapor discharge lamp according to claim 1, but does not expressly disclose that the lamp further comprises visible-light blocking filter, as claimed by Applicant. Hiramoto is cited to show a metal vapor discharge lamp with visible-light blocking filter (FIG. 1, item 6). Hiramoto teaches that the filter cuts out unnecessary light (i.e. visible light) (paragraph 66).

Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Otani's invention to include a visible-light blocking filter as suggested by Hiramoto for filtering out unnecessary light.

Regarding claim 5, Otani discloses the metal vapor discharge lamp according to claim 1, but does not expressly disclose that a distance between the pair of electrodes falls within a range of 1 mm to 6 mm, as claimed by Applicant. Hiramoto is cited to show a lamp with electrodes (item 12) in figure 2 where the electrodes are separated by 10 mm or less (paragraph 82). It

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would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Otani's invention to include a distance between the pair of electrodes falls within a range of 1 mm to 6 mm as suggested by Hiramoto, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Otani (US 4,870,316) in view of Ishigami et al. (US 6,353,289).

Regarding claim 4, Otani discloses the metal vapor discharge lamp according to claim 1, but does not expressly disclose that a wattage rating of the metal vapor discharge lamp is 100 W or less, as claimed by Applicant. Ishigami is cited to show a metal vapor discharge lamp that has a rate lamp power of at most 100 W (column 44, lines 52-58). Ishigami teaches that this rate lamp power can help control the lamp voltage (column 44, lines 52-58)

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Otani's invention to include a wattage rating of the metal vapor discharge lamp is 100 W or less as suggested by Ishigami for controlling the lamp voltage.

Claims 6-8 and 10-19 rejected under 35 U.S.C. 103(a) as being unpatentable over Hiramoto et al. (US PUB 2001/0056294) in view of Ishigami et al. (US 6,353,289).

Regarding claim 6, Otani discloses a metal vapor discharge lamp in figure 2 comprising: a refractory and light-transmitting hermetic vessel (see FIG. 2); a pair of electrode (item 12) fixed to said hermetic vessel; a discharge medium sealed in the hermetic vessel (paragraphs 83-

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86), the discharge medium containing a first halide and a rare gas (paragraphs 83-86), the first halide containing a halide of at least one of sodium (Na) (paragraph 86), the discharge medium substantially disusing mercury (paragraph 83), but does not expressly disclose a rare earth metal which radiates visible light (380-780 nm) and a ratio of visible-radiation power (380-780 nm) to near-infrared radiation power (750-1100 nm) falling within a range of 0.5:1 to 4.0:1, the visible-radiation power and the near-infrared radiation power being output when the metal vapor discharge lamp is in an ON state, as claimed by Applicant. Ishigami is cited to show a metal vapor discharge lamp that has a rare earth metal with a halide (column 11, lines 18-31). Ishigami teaches that it is known in the art that the light emission is increased and the arc can be narrowed (column 5, lines 9-22). The Examiner notes that since Ishigami uses a halide and a rare earth metal that the ratio would be present. Furthermore, Ishigami discloses that the ratio of emitted visible light to all the visible light emitted for the lamp should be small (column 8, line 64 thru column 9, line 4).

Therefore, it would have been obvious to one with ordinary skill in the art to modify Hiramoto's invention a rare earth metal which radiates visible light (380-780 nm) and a ratio of visible-radiation power (380-780 nm) to near-infrared radiation power (750-1100 nm) falling within a range of 0.5:1 to 4.0:1, the visible-radiation power and the near-infrared radiation power being output when the metal vapor discharge lamp is in an ON state as suggested by Ishigami for increasing light emission and narrowing the arc.

Regarding claim 7, the combined reference of Hiramoto and Ishigami disclose the metal vapor discharge lamp according to claim 6, wherein the discharge medium includes: a second halide which generates a relatively high vapor pressure and being a halide of at least one metal

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which emits a visible light less than that emitted by the metal of the first halide; a third halide containing a halide of at least one metal which radiates near-infrared light (Hiramoto; paragraphs 83-86).

Regarding claim 8, the combined reference of Hiramoto and Ishigami disclose the metal vapor discharge lamp according to claim 6, wherein the discharge medium contains a halide of at least one of potassium (K), which radiates light of near-infrared wavelengths (750-1100 nm) (paragraph 86).

Regarding claim 10, the combined reference of Hiramoto and Ishigami disclose the metal vapor discharge lamp according to claim 6, wherein a wattage rating of the metal vapor discharge lamp is 100 W or less (Ishigami; column 44, lines 52-58).

Regarding claim 11, the combined reference of Hiramoto and Ishigami disclose the metal vapor discharge lamp according to claim 6, wherein a distance between the pair of electrodes falls within a range of 1 mm to 6 mm (Hiramoto; paragraph 82).

Regarding claim 12, the combined reference of Hiramoto and Ishigami disclose the metal vapor discharge lamp according to claim 6, wherein the rare gas is Xe, Xe of five atoms or more being sealed in the hermetic vessel (Hiramoto; paragraph 96).

Regarding claim 13, the combined reference of Hiramoto and Ishigami disclose a projector in figure 6 of Ishigami comprising: a reflector (item 6); a metal vapor discharge lamp (item 5) as specified in any one of claims 1 to 12, the metal vapor discharge lamp being provided on the reflector; and a light control member covering a front surface of the reflector (Ishigami; FIG. 12, item 32).

Regarding claim 14, the combined reference of Hiramoto and Ishigami disclose the projector according to claim 13, wherein the projector is installed in a vehicle and used as a headlamp (Ishigami; FIG. 12 and column 1, lines 13-19).

Regarding claim 15, the combined reference of Hiramoto and Ishigami disclose the projector according to claim 13, further comprising visible-light blocking means for blocking visible light and passing near-infrared light therethrough in a high beam mode (Hiramoto; FIG. 1, item 6 and Ishigami; FIG. 27, item 86a), and means for removing the visible-light blocking means from a radiation direction of the metal vapor discharge lamp in a low beam mode (Hiramoto; FIG. 1, item 6 and Ishigami; FIG. 27, item 86b).

Regarding claim 16, the combined reference of Hiramoto and Ishigami disclose the projector according to claim 13, further comprising a visible-light blocking filter provided on at least one of front and rear surfaces of the light control member (Ishigami; FIG. 4, item 7).

Regarding claim 17, the combined reference of Hiramoto and Ishigami disclose the projector according to claim 16, wherein the projector is installed in a vehicle and used as a headlamp (Ishigami; FIG. 12).

Regarding claim 18, the combined reference of Hiramoto and Ishigami disclose the projector according to claim 17, wherein the visible-light blocking filter blocks visible light and passes near-infrared light therethrough in a high beam mode (Hiramoto; FIG. 1, item 6 and Ishigami; FIG. 27, item 86a), and further comprising means for removing the visible-light blocking filter from a radiation direction of the metal vapor discharge lamp in a low beam mode (Hiramoto; FIG. 1, item 6 and Ishigami; FIG. 27, item 86b).

Regarding claim 19, the combined reference of Hiramoto and Ishigami disclose a metal vapor discharge lamp lighting device (Ishigami; FIG. 6, item 5) comprising: a metal vapor discharge lamp as specified in any one of claims 1 to 12; and a lighting circuit which supplies a current three times or more a rated lamp current after the metal vapor discharge lamp is lit, and reduces the current with a lapse of time (Ishigami; column 17, line 65 thru column 18, line 7).

Response to Arguments

Applicant's arguments with respect to claims 1, 3-8, and 10-19 have been considered but are moot in view of the new ground(s) of rejection. With regards to claims 6-8 and 10-19, the Examiner respectfully disagrees. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the argument is moot in regards to one of the lamps being used for medical and the other lighting. Both are used to light and it stated that Ishigami discloses that light emission is increased and the arc can be narrowed (column 5, lines 9-22). The Examiner points to paragraph 66 of Hiramoto, which clearly discloses that the filter can be used to cut out visible light. Hence, Applicant's limitations are met as set forth by the rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalie K. Walford whose telephone number is (571)-272-6012. The examiner can normally be reached on Monday-Friday, 8 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571)-272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

nkW

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6/25/07

Sikha Roy

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PRIMARY PATENT EXAMINER